



Doosan Infracore
Machine Tools

PUMA VT450 / VT750 PUMA VT900 / VT1100

High Performance Vertical Turning Center



New standard for unsurpassed high productivity, high speed and high precision

The vertical turning center is designed for long term accuracy, heavy duty cutting and to minimize floor space. Its powerful spindle drives, meehanite casting and integral box guide way provide unsurpassed rigidity.

PUMA VT450 / VT750 **PUMA VT900 / VT1100**





Robust Bed Construction



In order to assure heavy duty machining and optimized chip flow, the machine base body is designed and streamlined. Its small foot print help you systemizing your manufacturing plan plot in your factory.



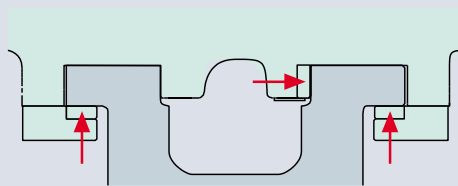
Robust Column Construction



The wide hardened and ground box ways reduce vibration promoting better tool life and surface finishes. The box ways are turcite coated which allows for 787 ipm rapid traverse rates. The Balanced Counter Weight located inside the column, neutralizes the gravity effect on the Vertical slide. It will also conserve electricity and prevent Turret Drop while in Emergency stop or Power failure.

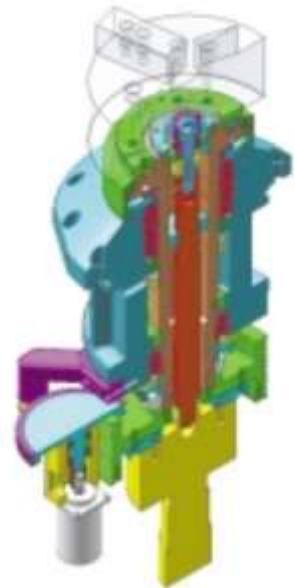
All axis Slides are Induction Hardened and Ground HRC 55 Hardness. Long-term Accuracies are very basic requirements on Doosan Infracore products.

3 adjustable Gibs on each Axis slide are provided to maintain original accuracy.

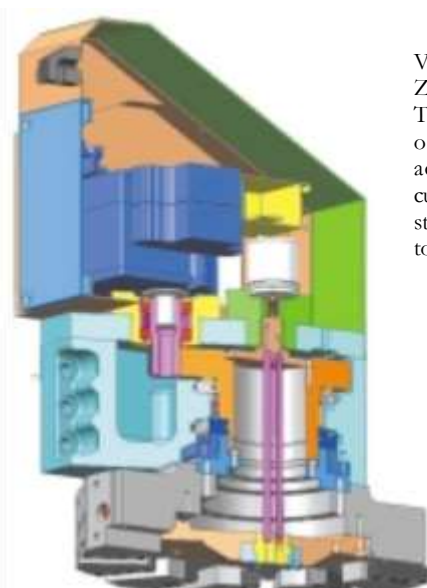


3Gibs Support on each for longterm and easy to maintain accuracy

High performance Spindle & Turret



The spindle is supported by a double row of tapered roller bearings in the Top and Bottom of the spindle while angular thrust bearings provide tremendous radial load capability. The Cartridge Spindle is axial symmetric construction, which provides very stable accuracy all day-long even when the spindle is heated up by continuous operation.

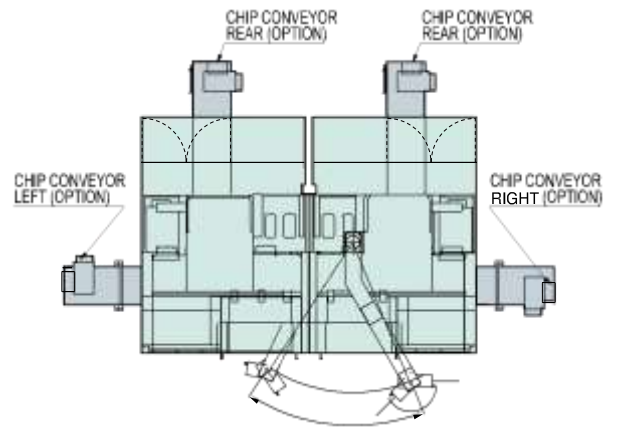


V12 Turret is ground finish for Zero accuracy. Turret has large Three piece curvic couplings. of clamping force so high accuracy and heavy-duty cutting can be achieved. The 12 station turret holds ID or OD tools.

Chip Disposal



Over head Coolant for chuck
Chip air blow
Bed wash coolant



Flexible Chip Conveyor
Right / Left (Rear / Side)

Easy operation



The swing arm on the Main Operation panel is a user-friendly feature to minimize the distance from Part to operator's Panel during set-up. Narrow Vertical panel is space saving design. The handy Sub Operation Panel beside Door for each spindle has Cycle start, Feed hold, Emergency stop, Door Open/close switches.



Safety Cover



12 mm Poly carvonnate

double steel cover

Accessories



Gear box (Option)
PUMA VT900/VT1100(Standard)



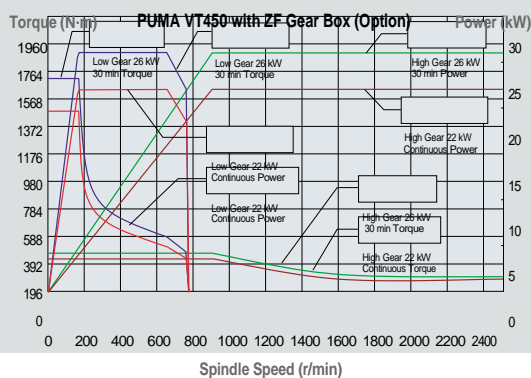
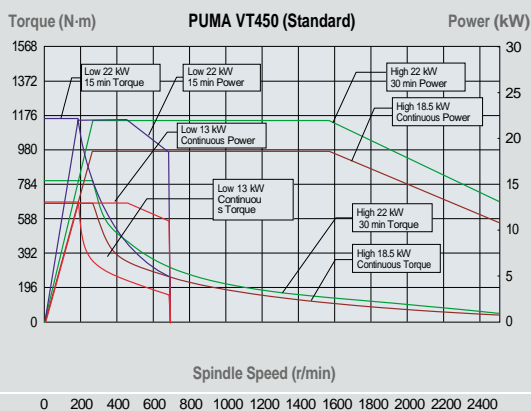
Auto door (Option)
Pneumatic cylinder



Manual tool setter (Option)
Removable type, Renishaw



Main Spindle Power-torque diagram



Max. spindle speed

2500 r/min

Motor (15 min)

22 kW

Travels (X/Z)

240 / 450 mm

Chuck size

305 mm

Max. Spindle speed

2500 r/min

Spindle motor (Cont./15min.)

18.5/22 kW

Rapid Traverse (X/Z)

20/20 m/min

Turret index time

1.6 s (PUMA VT450)

No. of tool station

12 stations

Std. M/C dimension
(L W H)

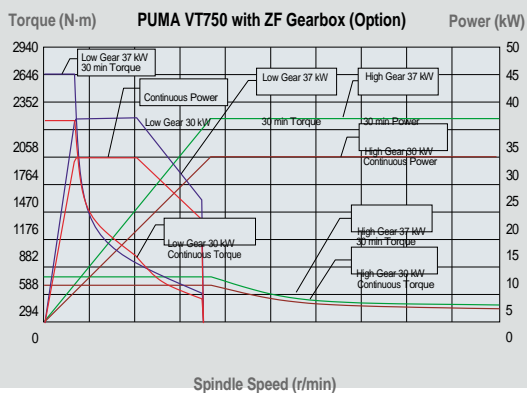
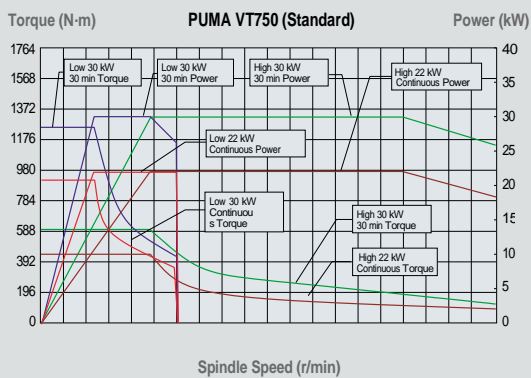
1445 2491 3009 mm
(PUMA VT450 / VT450M)

Machine weight

6200 kg (PUMA VT450 / VT450M)

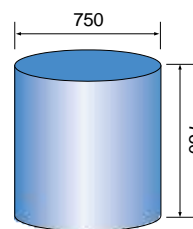


Main Spindle Power-torque diagram

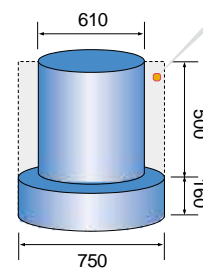


Working Range

Max. working range



Interference area



unit : mm

2000 r/min 30 kW

Main Specification (Std.)

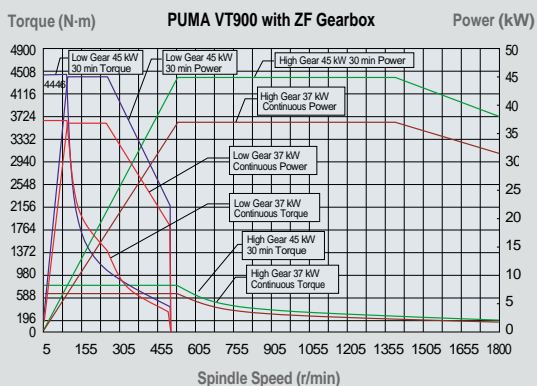
Travels (X/Z)	385 / 760 mm
Chuck size	381 mm
Max. Spindle speed	2000 r/min
Spindle motor (Cont./30min.)	22/30 kW
Rapid Traverse (X/Z)	20/20 m/min
Turret index time	1.8 s (PUMA VT750)
No. of tool station	12 stations
Std. M/C dimension	1850 2785 3450 mm
Machine weight	9700 kg (PUMA VT750 / VT750M)



Max. spindle speed
1800 r/min

Motor(30 min)
45 kW

Main Spindle Power-torque diagram

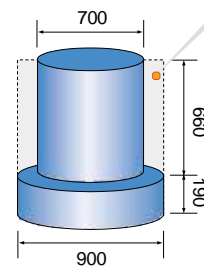
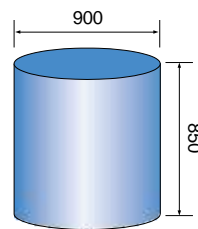


Working Range

Max. working range

Interference area

unit : mm



Main Specification (Std.)

Travels (X/Z)	470 / 850 mm
Chuck size	610 mm
Max. Spindle speed	1800 r/min
Spindle motor (Cont./30min.)	37/45 kW
Rapid Traverse (X/Z)	20/20 m/min
Turret index time	2.0 s (PUMA VT900)
No. of tool station	12 stations
Std. M/C dimension (L W H)	2130 3050 3621 mm (PUMA VT900 / VT900M)
Machine weight	12500 kg (PUMA VT900 / VT900M)



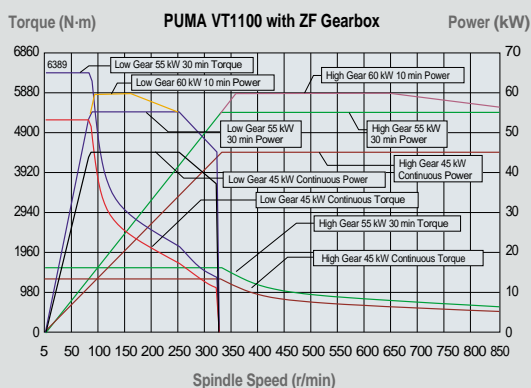
Max. spindle speed

850 r/min

Motor (10 min)

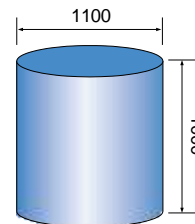
60 kW

Main Spindle Power-torque diagram

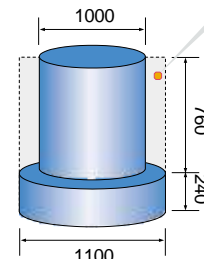


Working Range

Max. working range



Interference area



unit : mm

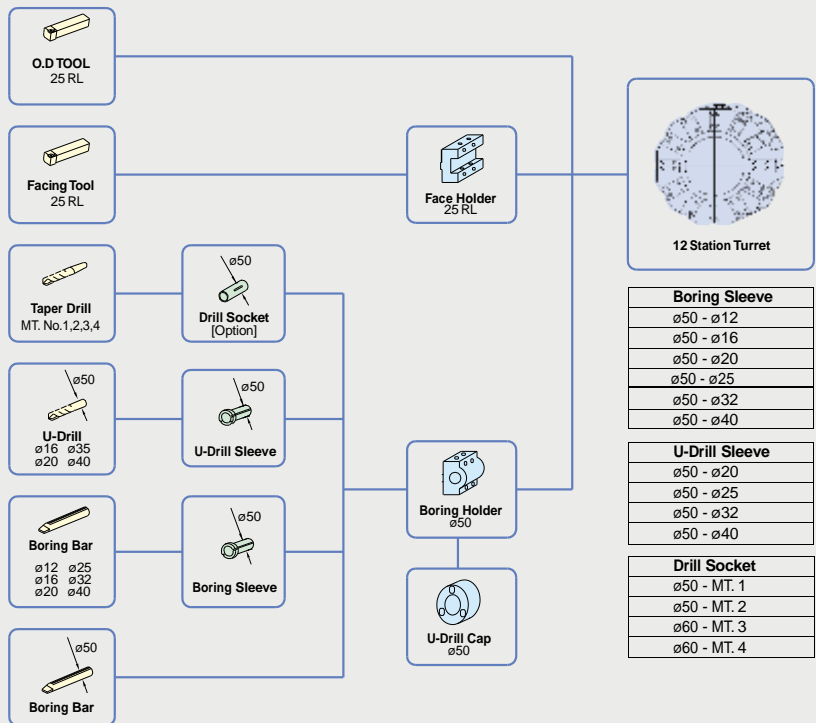
Main Specification (Std.)

Travels (X/Z)	580 / 1000 mm
Chuck size	800 mm Max.
Spindle speed	850 r/min
Spindle motor (Cont./30min./10min.)	45/55/60 kW
Rapid Traverse (X/Z)	20/20 m/min
Turret index time	2.2 s
No. of tool station	12 stations
Std. M/C dimension (L W H)	2850 3305 4012 mm
Machine weight	22000 kg

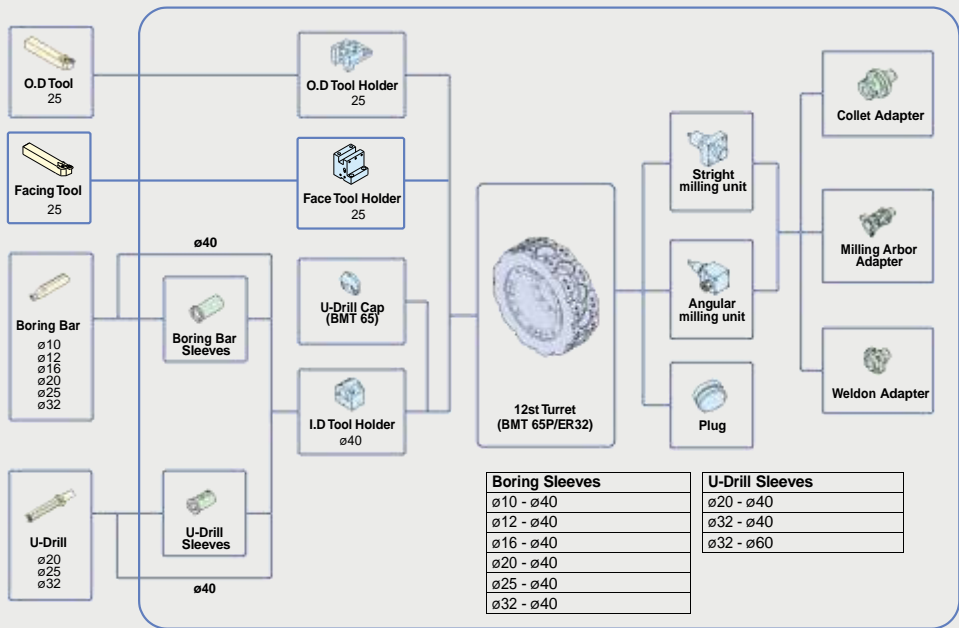
Tooling System

unit : mm

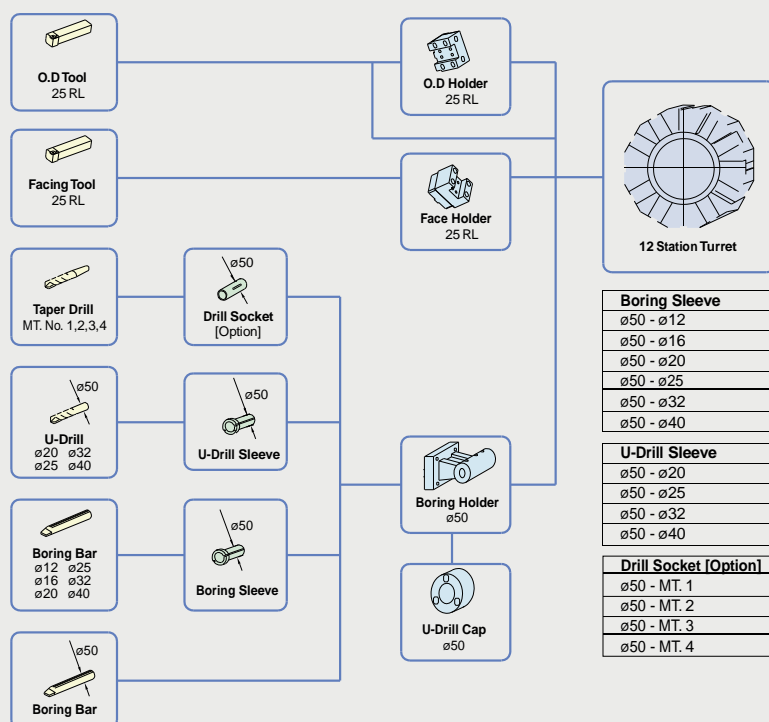
PUMA VT450 / VT450-2SP



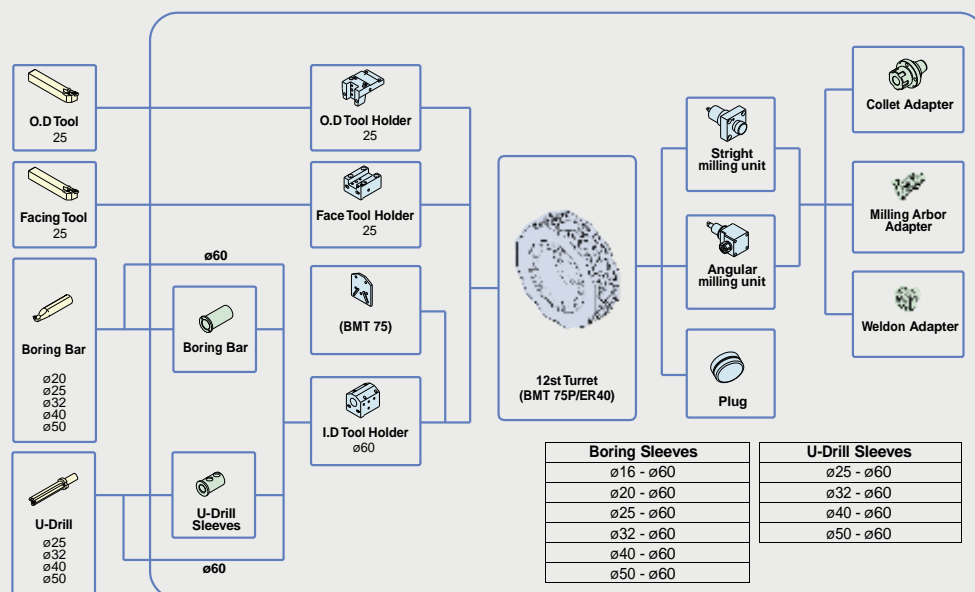
PUMA VT450M / VT450M-2SP



PUMA VT750 / VT750-2SP



PUMA VT750M / VT750M-2SP

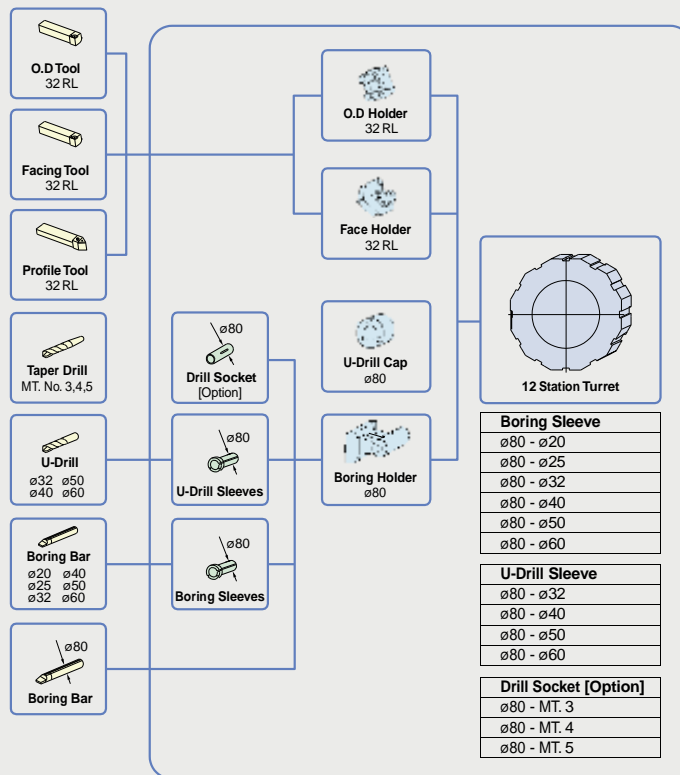


Note) Above tooling system is our recommendation. Depending on export condition, the standard tooling packed with the machine can be different.

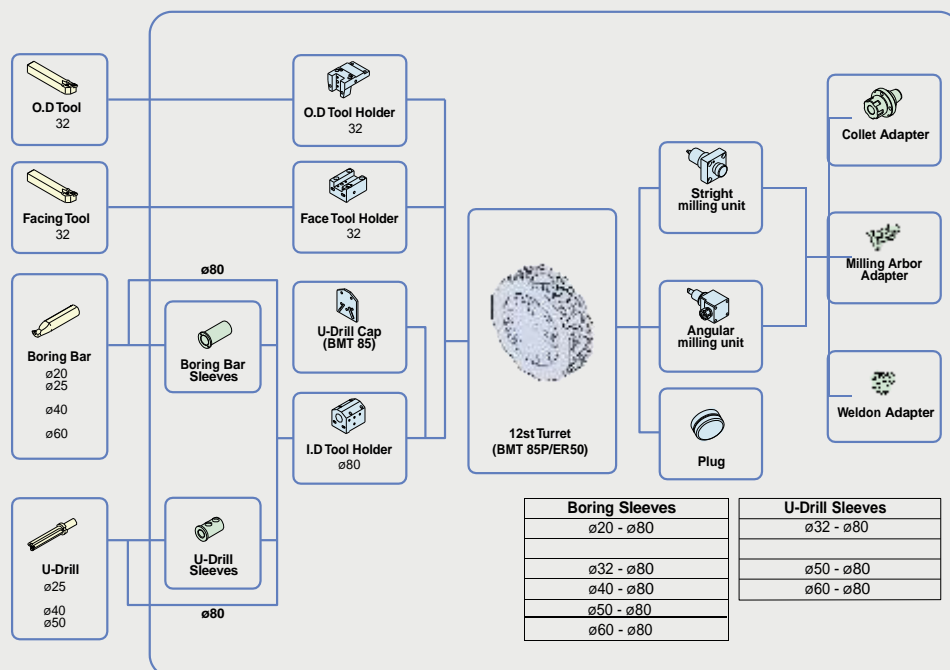
Tooling System

PUA VT900 / VT900-2SP

unit : mm

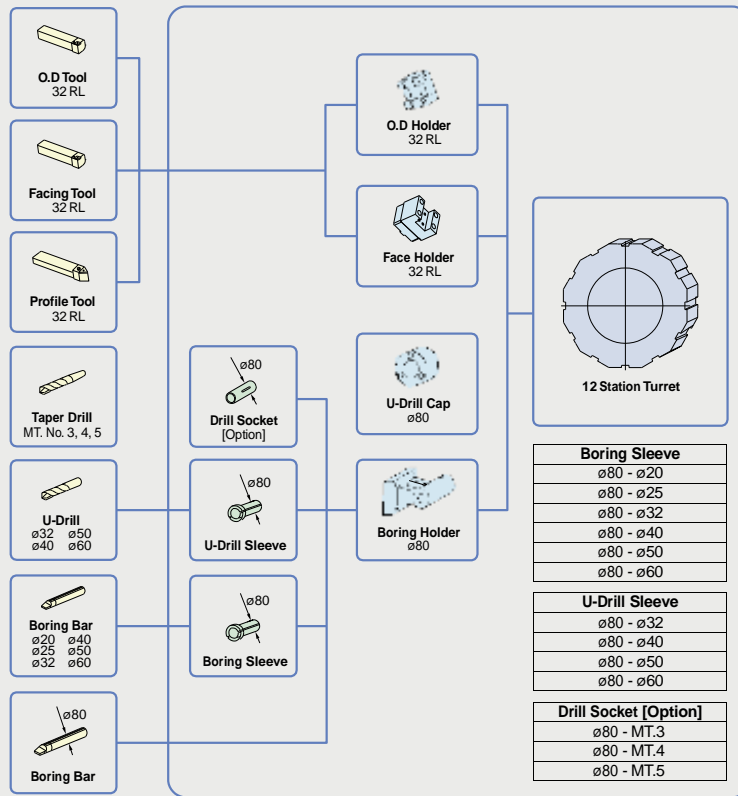


PUMA VT900M / VT900M-2SP

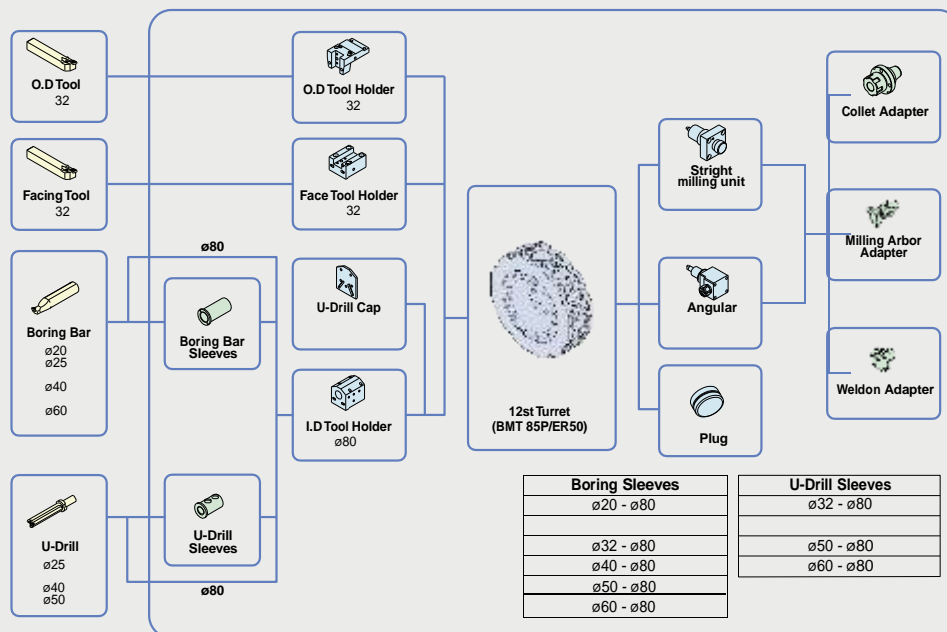


PUMA VT1100

unit : mm



PUMA VT1100 M

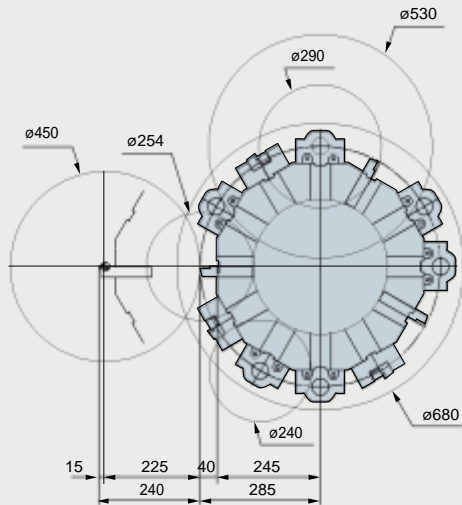


Note) Above tooling system is our recommendation. Depending on export condition, the standard tooling packed with the machine can be different.

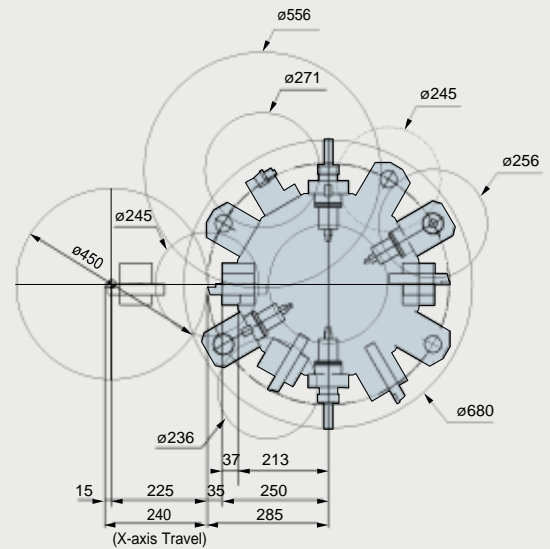
Tool Interference Diagram

unit : mm

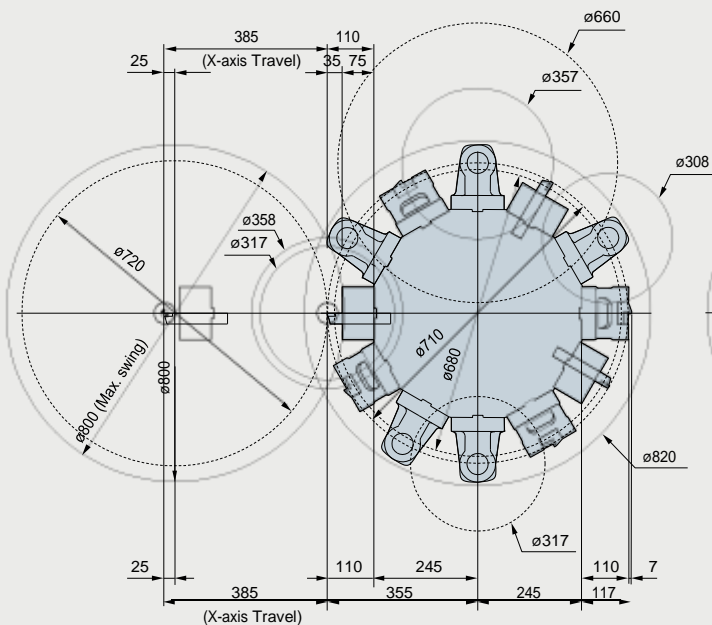
PUMA VT450 / VT450-2SP



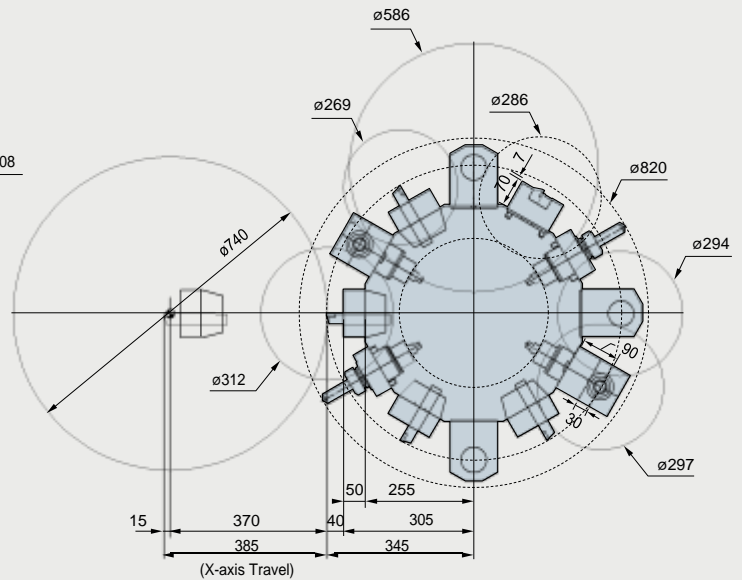
PUMA VT450M / VT450M-2SP



PUMA VT750 / VT750-2SP

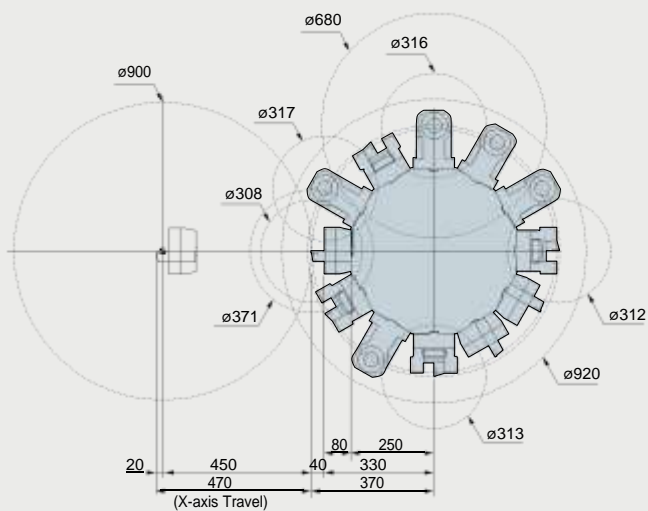


PUMA VT750M / VT750M-2SP

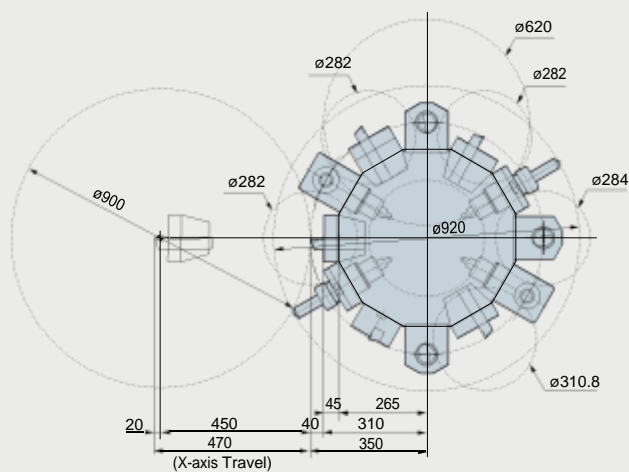


unit : mm

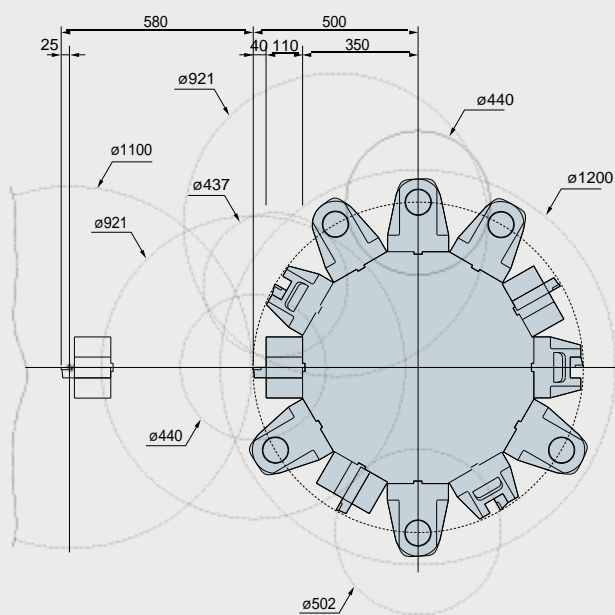
PUMA VT900 / VT900-2SP



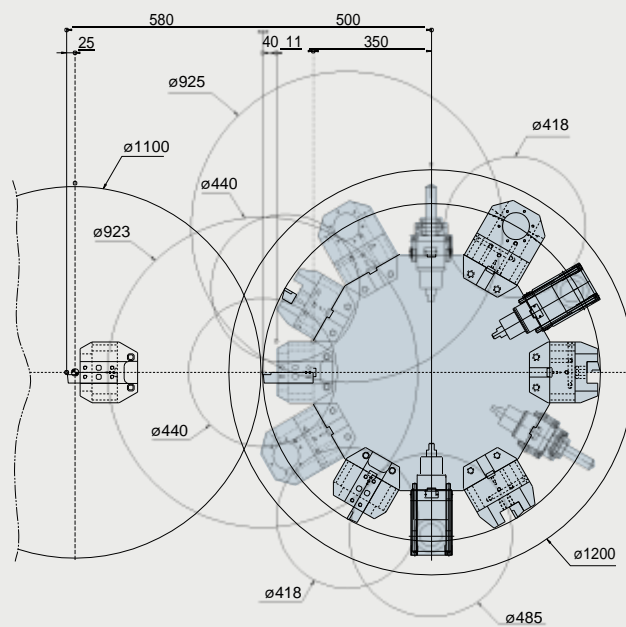
PUMA VT900M / VT900M-2SP



PUMA VT1100



PUMA VT1100M

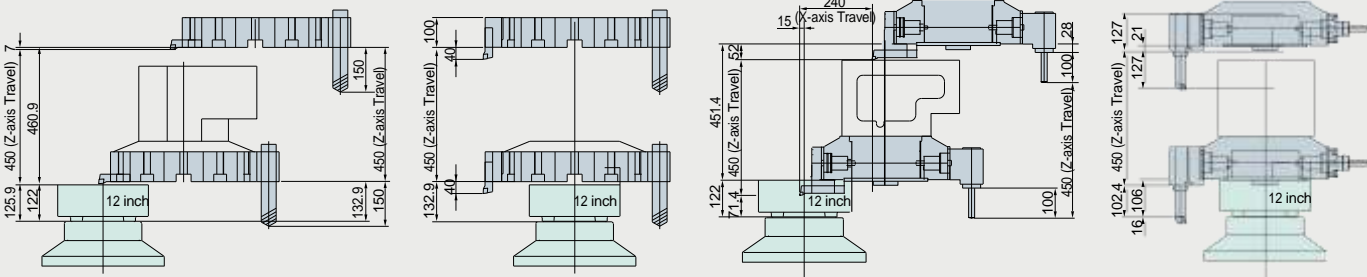


Working Range

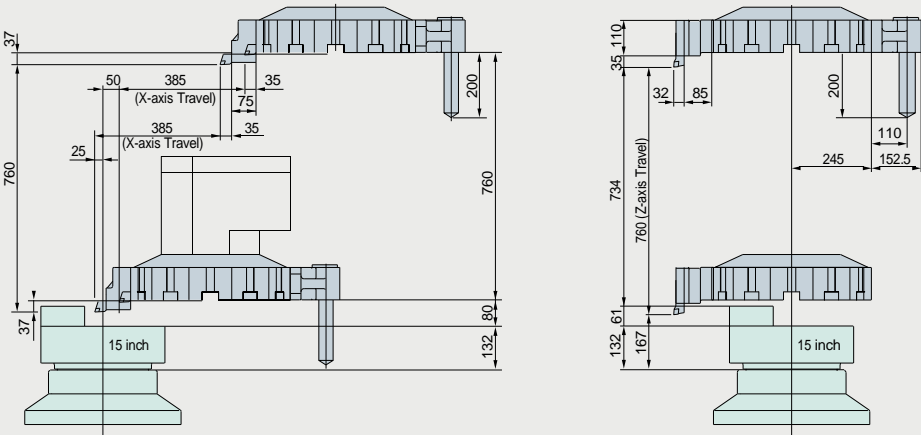
unit : mm

PUMA VT450 / VT450-2SP

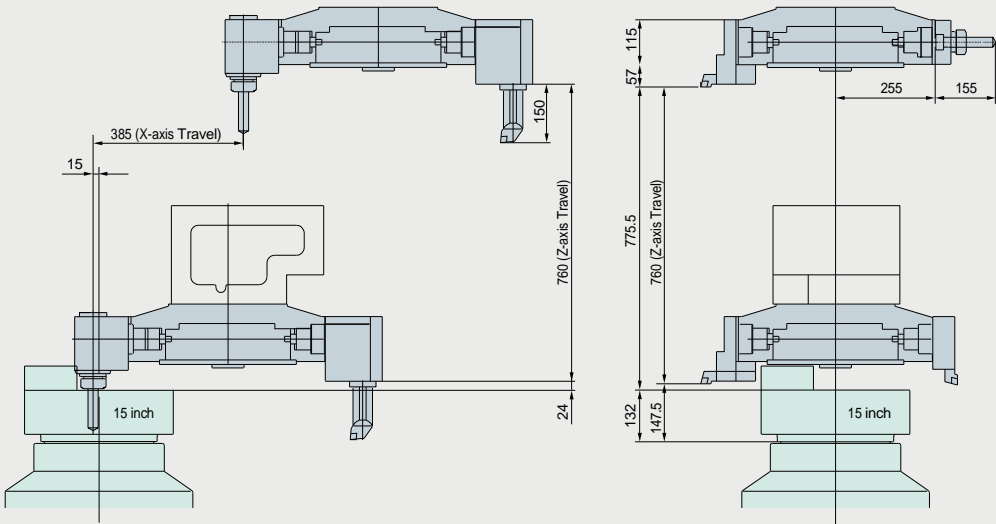
PUMA VT450M / VT450M-2SP



PUMA VT750 / VT750-2SP

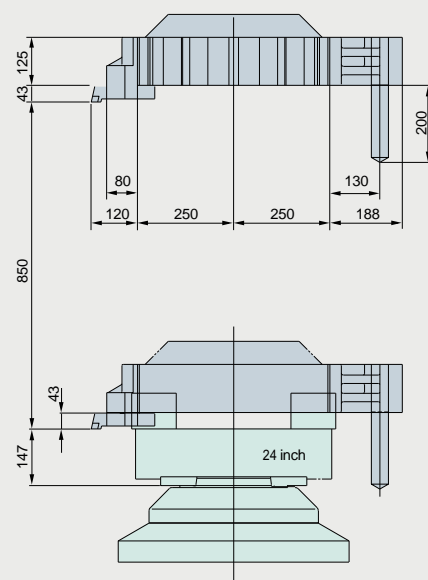
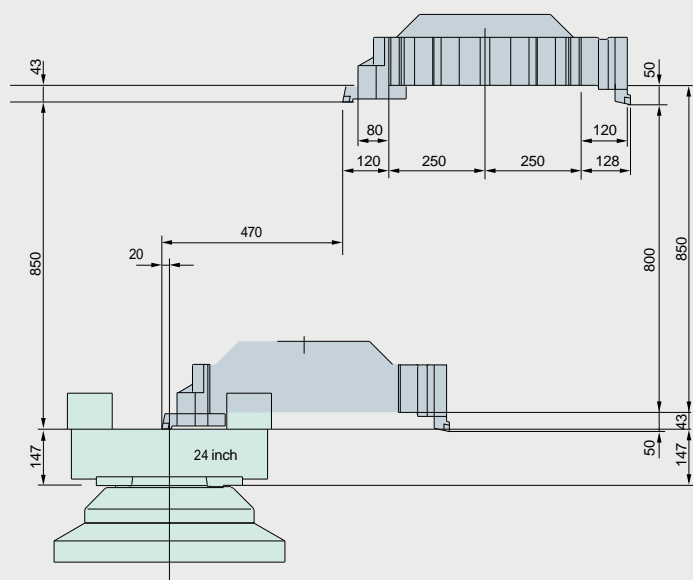


PUMA VT750M / VT750M-2SP

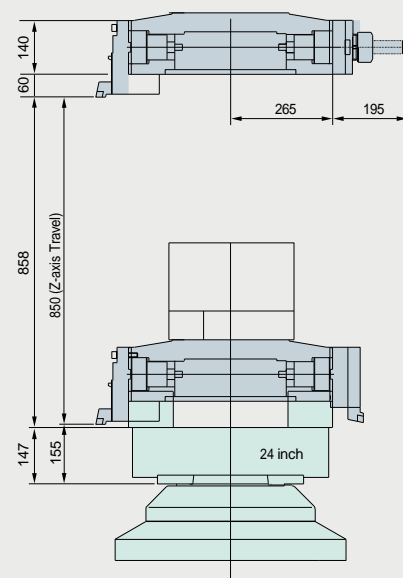
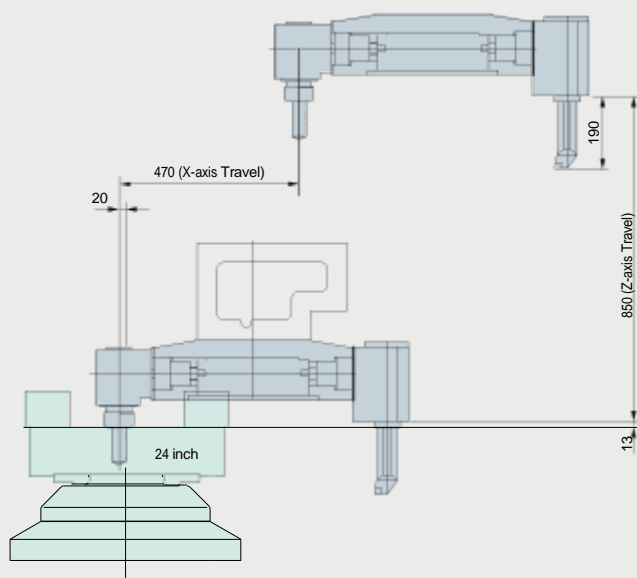


unit : mm

PUMA VT900 / VT900-2SP



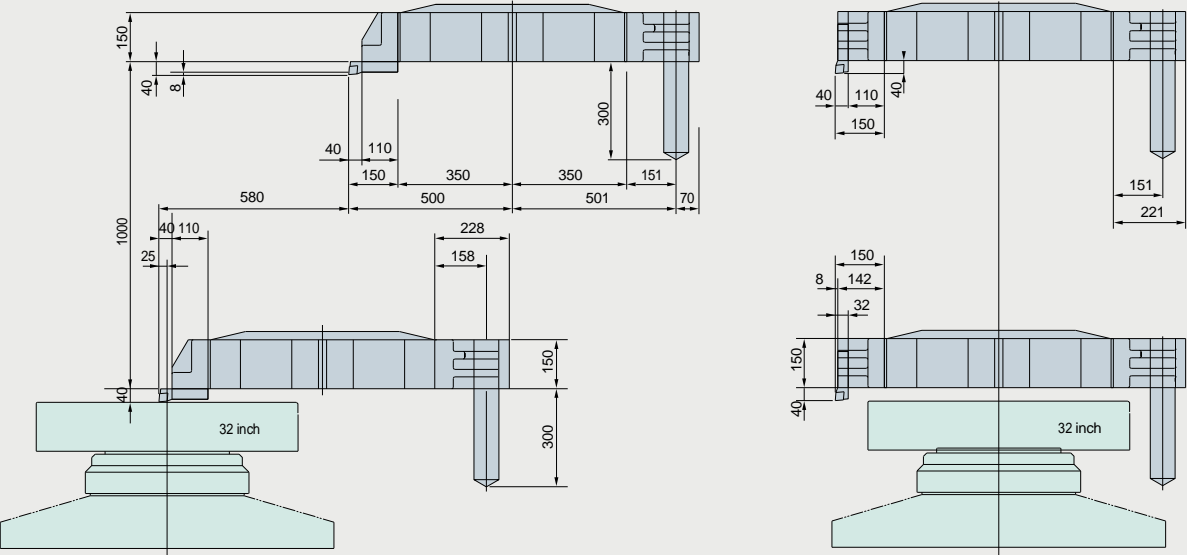
PUMA VT900M / VT900M-2SP



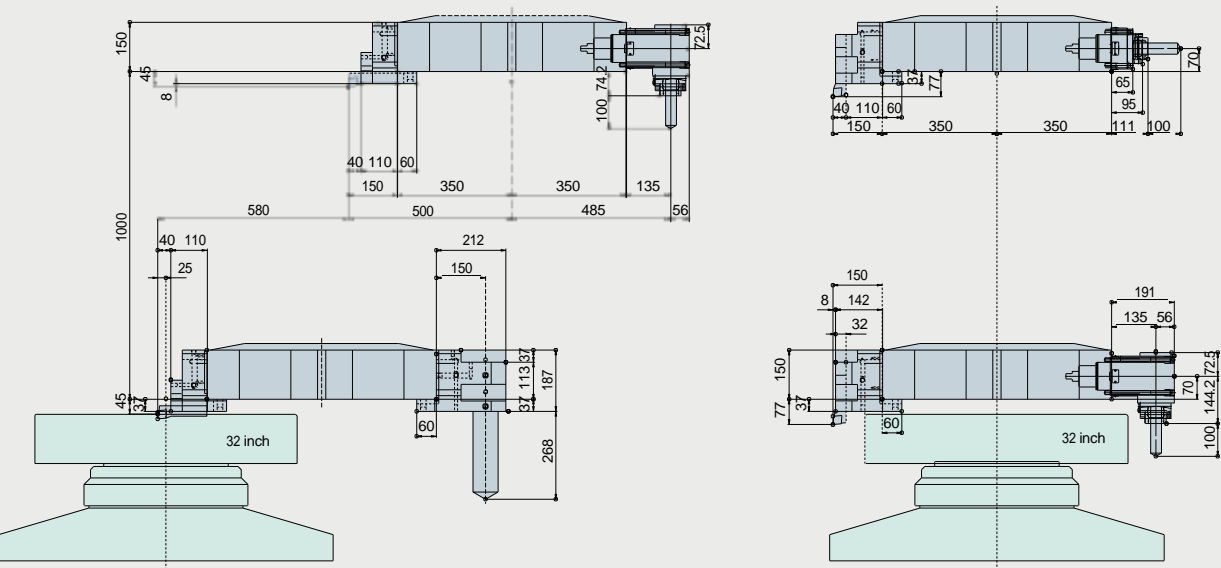
Working Range

unit : mm

PUMA VT1100



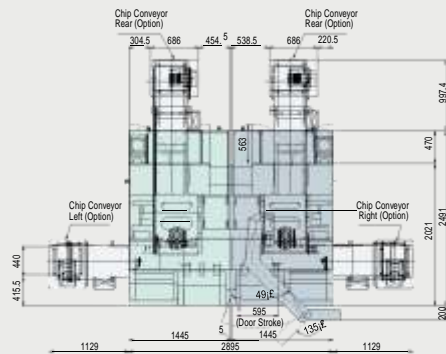
PUMA VT1100M



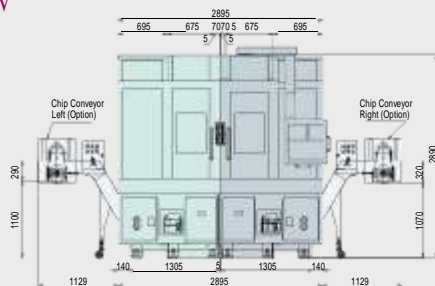
External Dimension

unit : mm

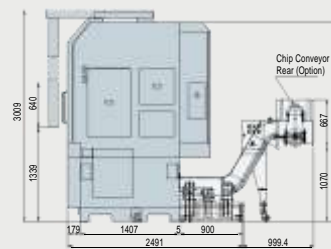
TOP VIEW



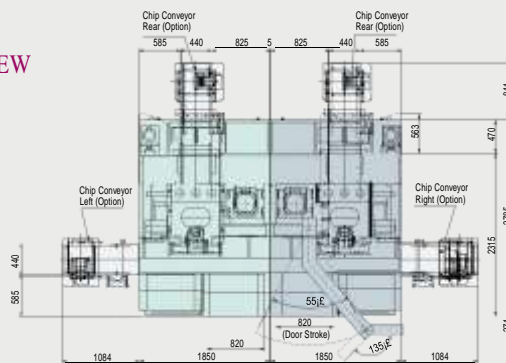
FRONT VIEW



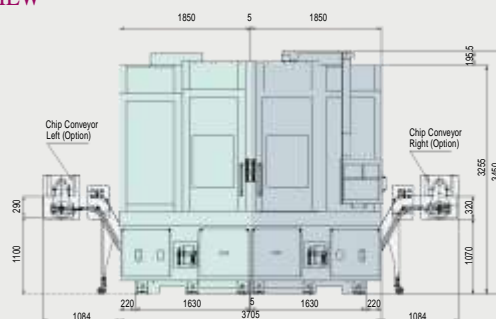
SIDE VIEW



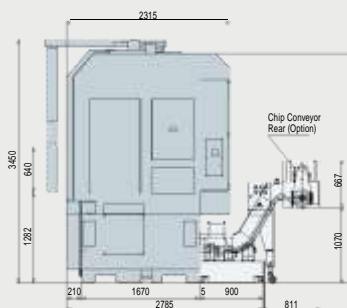
TOP VIEW



FRONT VIEW



SIDE VIEW



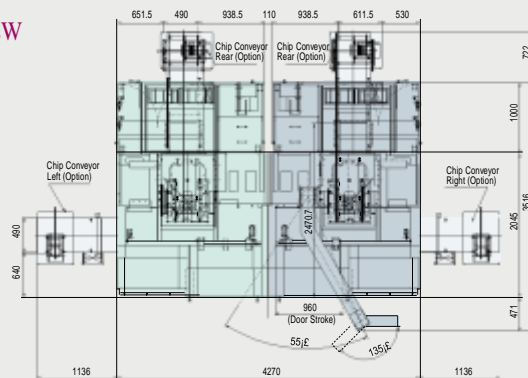
PUMA VT450 / VT450M /
PUMA VT450-2SP / VT450M-2SP

PUMA VT750 / VT750M
PUMA VT750-2SP / VT750M-2SP

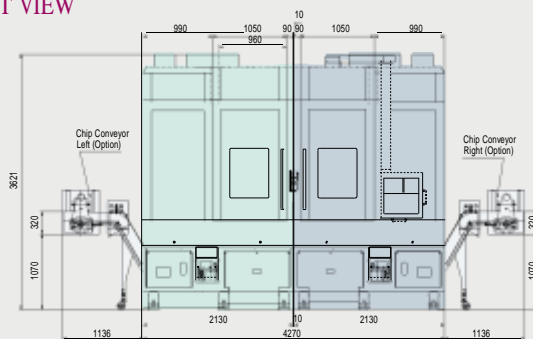
External Dimension

unit : mm

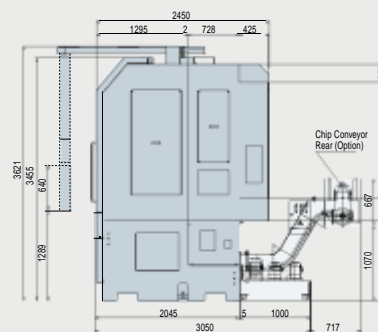
TOP VIEW



FRONT VIEW

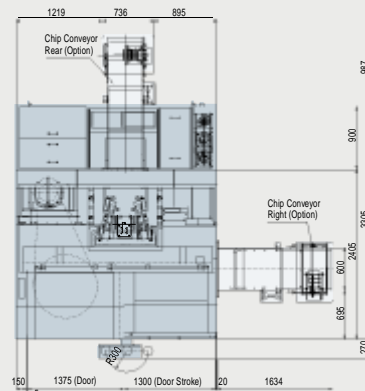


SIDE VIEW

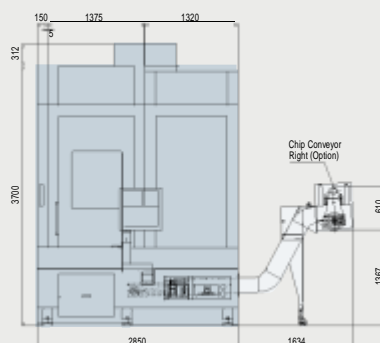


PUMA VT900 / VT900M
PUMA VT900-2SP / VT900M-2SP

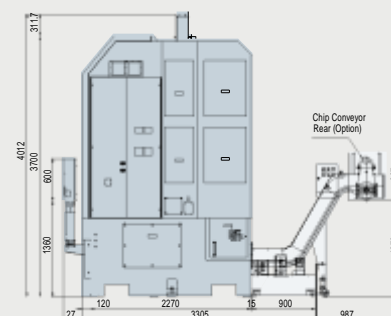
TOP VIEW



FRONT VIEW



SIDE VIEW



PUMA VT1100 / VT1100M

Machine Specifications

Item			VT450	VT450-2SP	VT450M	VT450M-2SP	VT750	VT750-2SP	VT750M	VT750M-2SP
Capacity	Swing over bed	mm			580				800	
	Swing over saddle	mm			450				610	
	Recom. Turning diameter	mm			380				450	
	Max. turning diameter	mm			450				750	
	Max. turning length	mm			450				760	
Travel	X-axis travel	mm			240				385	
	Z-axis travel	mm			450				760	
Main spindle	Spindle speed	r/min			2500				2000	
	Spindle nose	ASA			A2#8				A2#11	
	Spindle bearing diameter	mm			120				160	
	Spindle bore diameter	mm			62				77	
	Main spindle indexing angle (C-axis)	deg	-		360 (in 0.001)		-		360 (in 0.001)	
Turret	No. of tool stations	st			12				12	
	OD tool size	mm			25				25	
	Boring bar diameter	mm	50		40		50		60	
	Indexing time	s	1.6		1.2		1.8		1.4	
Feedrates	Rotary tool spindle speed	r/min			4000				3000	
	Rapid traverse (X-axis)	m/min			20				20	
	(Z-axis)	m/min			20				20	
Motor	Main spindle motor	kW			22 (15min.) {26 (30min.)}				30 (30min.) {37 (30min.)}	
	Servo motor (X/Z-axis)	kW			3.0/4.0				3.0/4.0	
	Rotary tool spindle motor	kW	-		4.5		-		7.0	
Power source	Electric power supply	kVA	50	95	55	100	55	105	60	115
		kVA	55	105	60	110	65	125	70	140
Machine size	Machine height	mm			3009				3450	
	Machine dimension (length)	mm	1445	2895	1445	2895	1850	3705	1850	3705
	(width)	mm			2491				2785	
	Machine weight	kg	6200	12400	6200	12400	9700	19400	9700	19400
Controller			Fanuc 0i-TC	Fanuc 18i-TB	Fanuc 0i-TC	Fanuc 18i-TB	Fanuc 0i-TC	Fanuc 18i-TB	Fanuc 0i-TC	Fanuc 18i-TB

{ } : option

Standard Feature

Coolant flushing for bed	Hand tool kit, including small hand	Soft jaws
Coolant flushing for chuck	tool for operationst	Standard tooling kit (tool holders & boring sleeve & U-Drill sleeve)
Coolant supply equipment	Hydraulic power unit	Work light
Full enclosure chip and coolant shield	Leveling jack screw & plates	
Hydraulic chuck & actuating cylinder	Lubrication equipment	

Optional Feature

Air blast for chuck jaw cleaning	Dual chucking pressure	Proximity switch for chuck clamp detection
Automatic door with safety device	Hardened & ground jaws	Signal tower (yellow, red, green)
Chip bucket	High pressure coolant	Special chucks
Coolant gun	Manual tool presetter (Removable type)	Straddle tool preparation (Piping & Solenoid valve, Exclude straddle tool)
Drill socket	Oil skimmer (Belt type)	

Design and specifications are subject to change without notice.

We do not responsible for difference between the information in the catalogue and the actual machine.

Machine Specifications

Item			VT900	VT900-2SP	VT900M	VT900M-2SP	VT1100	VT1100M
Capacity	Swing over bed	mm	1000				1270	
	Swing over saddle	mm	700				1000	
	Recom. Turning diameter	mm	610				800	
	Max. turning diameter	mm	900				1100	
	Max. turning length	mm	850				1000	
Travel	X-axis travel	mm	470				580	
	Z-axis travel	mm	850				1000	
Main spindle	Spindle speed	r/min	1800				850	
	Spindle nose	ASA	ISO 702-1 A2#15				ISO 702-4-No15	
	Spindle bearing diameter	mm	200				200	
	Spindle bore diameter	mm	107				100	
	Main spindle indexing angle (C-axis)	deg	-	360 (in 0.001)			-	360 (in 0.001)
Turret	No. of tool stations	st	12				12	
	OD tool size	mm	32				32	
	Boring bar diameter	mm	80				80	
	Indexing time	s	2.0	1.6			2.2	
Feedrates	Rotary tool spindle speed	r/min	3000				-	3000
	Rapid traverse (X-axis)	m/min	20				20	
	(Z-axis)	m/min	20				20	
Motor	Main spindle motor	kW	45 (30min.)				60 (10min.)	
	Servo motor (X/Z-axis)	kW	4.0/4.0				4.0/7.0	
	Rotary tool spindle motor	kW	6.0				-	11
Power source	Electric power supply	kVA	75	145	80	155	90	100
Machine size	Machine height	mm	3621				4012	
	Machine dimension (length)	mm	2130	4270	2130	4270	2850	
	(width)	mm	3050				3305	
	Machine weight	kg	12500	25000	12500	25000	22000	
Controller			Fanuc 21i-TB	Fanuc 18i-TB	Fanuc 21i-TB	Fanuc 18i-TB	Fanuc 21i-TB	

Standard Feature

Coolant flushing for bed	Hand tool kit, including small hand	Soft jaws
Coolant flushing for chuck	tool for operationst	Standard tooling kit (tool holders &
Coolant supply equipment	Hydraulic power unit	boring sleeve & U-Drill sleeve)
Full enclosure chip and coolant shield	Leveling jack screw & plates	Work light
Hydraulic chuck & actuating cylinder	Lubrication equipment	

Optional Feature

Air blast for chuck jaw cleaning	Dual chucking pressure	Proximity switch for chuck clamp detection
Automatic door with safety device	Hardened & ground jaws	Signal tower (yellow, red, green)
Chip bucket	High pressure coolant	Special chucks
Coolant gun	Manual tool presetter (Removable type)	Straddle tool preparation (Piping & Solenoid
Drill socket	Oil skimmer (Belt type)	valve, Exclude straddle tool)

Design and specifications are subject to change without notice.
We do not responsible for difference between the information in the catalogue and the actual machine.

NC Specifications

	Item	Spec.	Fanuc-0iTC	Fanuc-21iTB	Fanuc-18iTB
Controls	Controlled Axes	std. 2 axes	X, Z, C (M)	X, Z, C (M)	X, Z, C (M) + X, Z, C (M)
	Simultaneously Controlled Axes	std. 2 axes	3 axes (M)	3 axes (M)	3 axes (M) + 3 axes (M)
Axis functions	Least Input Increment	0.001mm (0.0001")			
	Stored stroke check 1	Software overtravel signal by parameters			
	Stored stroke check 2	Software overtravel signal by parameters		-	-
	Overtravel	Hardware overtravel signal			
	Follow up				
	Servo off				
	Backlash Compensation				
	Cs Control HRV		(M)	(M)	(M)
Operation & Interpolation function	control Feedrate	Servo HRV2 control			
	Override Override	0 ~ 200% (10% step)			
	Cancel Positioning				
	Linear Interpolation	G00			
	Circular Interpolation	G01			
	Dwell	G02,G03			
	Skip Function	G04			
	1st Reference Point Return	G31 (only Software)			
	Reference Point Return Check	G28			
	2nd Reference Point Return	G27			
	Manual Pulse Handle Feed (1 unit)	G30			
	Dry run	X1, X10, X100			
	Rapid Traverse Override	Jog feedrate			
	Continuous Threading				
	Polar Coordinate Interpolation				
	Cylindrical Interpolation		(M)	(M)	(M)
	Variable Lead Threading		(M)	(M)	(M)
	Spindle Speed function			Opt.	Opt.
Spindle functions	Spindle Override	S4-digit, binary output			
	Spindle Serial Output	0% ~ 150% (10% step)			
	Constant Surface Speed Control				
	Spindle Orientation				
	Canned Cycle for Turning	1 Position			
	Canned Cycle for Drilling	G90,G92,G94			
	Multiple Repetitive Canned Cycle	G80 ~ G89			
	Inch/Metric Conversion	G70 ~ G76	-		
Programming functions	Back-Ground Editing	G20 / G21			
	Optional Block Skip				
	M function				
	Sub-Program Call	M3-digits			
	Program end & Rewind	4 folds nested			
	Program stop	M02, M30			
	Optional stop	M00			
	Program Number Input	M01			
	Sequence Number Input	O4-digits			
	Manual Absolute On/Off	N5-digits			
	Custom Macro B				
	Chamfering on/off				
	Programmable Data Input				
	Direct Drawing Dimensions Programming	G10			
	Diameter/Radius Programming(X-axis)				
	Automatic Corner Override	X-axis			
	Coordinate System Rotation		-	-	Opt.
	Optional Block Skip 9 Sets		-	-	Opt.
	Multiple Repetitive Canned Cycle II	Hardward Added	-	Opt.	Opt.
Tool functions	T-code function				
	Tool Life Management	T2+2 digits			
	Tool Geometry/Wear Offset				
	Tool Offset Pairs				
	Tool Nose Radius Compensation		64	64	±6 digits : 32 pairs
Editing functions	Program Input Code	G40~G42			
	Play Back	EIA, ISO			
	Extended Part Program Editiong			Opt.	Opt.
	Program protect				
	Part Program Storage Length				
	Number of Registered Programs	640M (256KByte)	640M	640M (max.1280M)	640M (max.5120M)
Setting & display	Run time and Parts number display		400	200	125 (Max.1000)
	Help function				
	Alarm history display				
	Lock function	CNC alarm and Machine alarm			
	Self-Diagnosis function				
	Multi Language Display				
	I/O Interface				
Data input & output	Memory card Input/Output	RS232C			
	External Program Input				
	External work number search				
	Display Unit	15 digits			
Other functions	Ethernet Function		10.4" color LCD	10.4" color LCD	10.4" color LCD
	Rigid tapping	Embeded Ethernet	Opt.		

PUMA VT450 / VT750 / VT900 / VT1100



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